

DIFFUSION BARRIER COATING FOR Si-BASED COMPONENTS

ABSTRACT OF THE DISCLOSURE

5 [0080] A component comprising a silicon-based substrate and a diffusion barrier coating disposed on the silicon-based substrate. The diffusion barrier coating comprises an isolation layer disposed directly on the silicon-based substrate and at least one oxygen barrier layer disposed on the isolation layer. The oxygen barrier layer prevents the diffusion of oxygen therethrough, and

10 prevents excessive oxidation of the silicon-based substrate. The isolation layer(s) prevent contaminants and impurities from reacting with the oxygen barrier layer. An environmental barrier coating may be disposed on the diffusion barrier coating, and a thermal barrier coating may be disposed on the environmental barrier coating. Methods for making a component having a

15 diffusion barrier coating are also disclosed.